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ABSTRACT

Researchers have assumed that global self-esteem (often labeled as general self-concept), being a general aggregate of perceptions of the self, is content free. Recent research has, however, shown that responses to self-esteem survey items are influenced by the context in which the respondents are asked to make their responses--a "chameleon effect." In 2 confirmatory factor analytic studies in an academic context, the relations between self-esteem responses that are more general and those that are more easily associated cognitively with academic work were examined together with school self-concept. Study 1 with high school students in China found that students did not differentiate between the hypothetical academic and nonacademic self-esteem constructs, and the correlation between self-esteem and school self-concept was high. Study 2 with college students found that students differentiated between academic and nonacademic self-esteem whereas academic self-esteem correlated more highly with school self-concept than did nonacademic self-esteem. Whereas self-esteem responses by high school students may be based highly on interpretations of the self-esteem items in terms of experiences in the school setting, responses to more general, context free items by more matured students with diverse life experiences may be less academic than those items that are more readily related to the academic context. (Contains 44 references and 3 tables.) (Author)

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Global Self-Esteem: Cognitive Interpretation in an Academic Setting

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July 2003

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Paper presented at the International Conference on Cognitive Science of the Australian Society for cognitive Science in Sydney, July 2003. The author thanks Winnie Puiling Liu for constructive comments. Enquiries concerning this paper should be directed to Alexander S. Yeung, Lecturer and Senior Program Developer, Division of Continuing Professional Education, Hong Kong Institute of Education, 10 Lo Ping Road, Tai Po, N.T., Hong Kong or via email to ssyeung@ied.edu.hk

Abstract

Researchers have assumed that global self-esteem (often labeled also as general self-concept), being a general aggregate of perceptions of the self, is content free. Marsh and Yeung (1998) have, however, shown that responses to self-esteem survey items are influenced by the context in which the respondents are asked to make their responses—a "chameleon effect". In 2 confirmatory factor analytic studies in an academic context, the relations between self-esteem responses that are more general (nonacademic self-esteem) and those that are more easily associated cognitively with academic work (academic self-esteem) were examined together with school self-concept (i.e., more specific self-concept associated with schoolwork). Study 1 with high school students in China (N = 474) found that students did not differentiate between the hypothetical academic and nonacademic self-esteem constructs, and the correlation between self-esteem and school self-concept was high (r=.68). Study 2 with college students (N = 654) found that students differentiated between academic and nonacademic self-esteem whereas academic self-esteem correlated more highly with school self-concept than did nonacademic self-esteem. Whereas self-esteem responses by high school students may be based highly on interpretations of the self-esteem items in terms of experiences in the school setting, responses to more general, context free items by more matured students with diverse life experiences may be less academic than those items that are more readily related to the academic context.

Self-esteem is typically assumed to be a content-free global measure of self-worth in personality and social psychology as well as research in other disciplines. However, Marsh and Yeung (1999) proposed a chameleon effect hypothesis, which suggests that cognitive interpretations of self-esteem items and the nature of self-esteem measures may be altered by the content of other items in the survey where the self-esteem items are embedded. Referring to research on context effects in human judgment (e.g., Manis, 1967; Morse & Gergen, 1970; Parducci, 1965; Sherif, 1935; Sherif & Hovland, 1961; Upshaw, 1969) and findings based on human mental processing theories (Schwarz & Strack, 1991; Schwarz, Strack, Kommer, & Wagner, 1987; Strack, Martin, & Schwarz, 1988; Strack, Schwarz, & Wanke, 1991; Tourangeau & Rasinski, 1988), Marsh and Yeung found that self-esteem responses to a survey on physical ability takes on a more physical flavor whereas responses to the same self-esteem items in a survey on academic work takes on a more academic flavor. This chameleon effect may seriously undermine findings in research where comparisons are based on

responses to surveys in different contexts. If the identical self-esteem items may not carry the same meaning when placed in a different context, then comparison of these responses would be like comparing "apples and oranges" (Marsh & Yeung, 1999). Whereas Marsh and Yeung have presented an important issue in the measurement and interpretation of the global self-esteem construct, the present study attempts to offer a possible way to address this issue. The present investigation examines whether some global self-esteem items may be more general and content free whereas some other items may be more likely to be interpreted as academic when they appear in a survey instrument with a focus on academic work.

Self-concept and Self-esteem

Because self-esteem is related to important outcomes and other psychological constructs, it has been a hot topic considered by researchers (Brown, 1993). In the broad definition of self-concept offered by Shavelson, Hubner, and Stanton (1976) that has generated an immense momentum in recent self-concept research, self-esteem is defined as a general, global self-concept under which multiple dimensions of self-concepts are subsumed (e.g., social, physical, academic self-concepts). Recent research on the basis of the Shavelson, Hubner, and Stanton hierarchical and multidimensional model of self-concept has led to considerable advances in the quality of self-concept research with stronger theoretical models, better measurement instruments, and improved methodology (see Byrne, 1984, 1996; Hattie, 1992; Marsh, 1990a, 1993a; Marsh & Hattie, 1996; Marsh & Shavelson, 1985). One of the greatest advances in the knowledge of self-concept is its multidimensionality such that an individual may have a positive academic self-concept but average physical and social self-concepts. The emphasis on multidimensionality has also led to the development of measures of multiple specific dimensions of self-concept (e.g., Marsh, 1990a, 1990b, 1992b, 1993a, 1993b, 1993c; Marsh, Richards, Johnson, Roche, & Tremayne, 1994; Vispoel, 1993, 1995).

Incorporated in the multidimensional self-concept instruments, however, are often self-esteem items that are assumed to constitute a general, global construct that reflect multiple components of an individual's self-concept. For example, items derived from the Rosenberg (1979) instrument are incorporated in Marsh's SDQ instruments to provide a measure of a general, global construct that is referred to as self-esteem throughout the present investigation. The use of a self-esteem scale is often based on the assumption that self-esteem items measure a unidimensional construct that is relatively content free and are not affected by the other items with which they appear in the survey. The self-esteem scale is characterized by self-perceptions in a general sense such that self-perceptions of confidence, competence, satisfaction, and pride in one's accomplishments are not related to self-concept in a specific domain. It is assumed that respondents subjectively evaluate the general characteristics in relation to a range of different domains, weighted by the saliency of each domain. However, Marsh (1990a, 1993a) found that self-esteem is less stable than specific domains measured on multiple occasions. Furthermore, Marsh and Yeung (1999) suggested that responses to self-esteem items tend to be influenced by the context of the survey in which the self-esteem items appear.

Cognitive Processes in Responding to Self-esteem Survey Items

Marsh and Yeung (1999) argued that the effects of contextual features in a survey tend to lead the respondent of the survey to interpret the items in a specific context. The cognitive processes in which the human brain handles information within that context formed a strong basis for Marsh and Yeung's hypothesis of a chameleon effect in self-esteem measures (e.g., Sudman, Bradburn, & Schwarz, 1996; Tourangeau & Rasinski, 1988). In explaining the cognitive process in which an individual responses to survey items, Tourangeau and Rasinski (1988) posited a four-stage processing model which describes the respondent's interpretation of an item, retrieving relevant beliefs and feelings, applying these beliefs in forming a

judgment, and using the judgment to determine a response. Tourangeau and Rasinski noted that context can affect any of these stages and may influence the interpretative framework that defines the scope within the respondent, and may provide a priming effect for what information is to be retrieved from long-term memory. Thus when self-esteem items are embedded in a survey in which the other items focus on academic work, the respondent's stored information about academic work is activated and becomes more accessible, causing the responses to the presumably general self-esteem items to become more related to perceptions of academic work.

Similarly, in discussing context effects in survey research, Sudman, Bradburn, and Schwarz (1996) noted that preceding questions could influence both the interpretation and retrieval of information that is relevant to subsequent questions. According to Sudman, Bradburn, and Schwarz, context effects may occur when responses to preceding questions activate the information in memory for providing such responses. The information related to the context becomes more accessible so that there is an increased likelihood of using the information in forming judgments to subsequent questions. Hence, after responding to questions about physical abilities, for example, information pertaining to physical characteristics becomes more accessible in memory and subsequent responses to self-esteem items may be based on this information related to the respondent's physical characteristics.

In explaining the priming effect and accessibility of information due to the influence of context, Schwarz and Strack (1991; also see Schwarz, Strack, Kommer, & Wagner, 1987) interpreted the process of completing a survey as a special form of "conversation". When a piece of information pertaining to a certain context becomes activated in the conversation, responses to subsequent questions will tend to refer to that context because information pertaining to that context has become more accessible. Strack, Martin, and Schwarz (1988) demonstrated that preceding questions about dating activated information in long-term memory about dating which subsequently influenced the interpretation of the questions on happiness. Consistent with Schwarz and Strack (1991), Marsh and Yeung (1999) showed that when asked questions about academic self-concept, because students' stored information about academic work became activated and was used to define the context for subsequent self-esteem questions, their responses to the self-esteem items became more academic than would be in a more general context. Similarly, when the preceding questions were about physical activities, the context became physical and subsequent self-esteem responses also became more physical. Thus the chameleon effect occurred when the meaning of the self-esteem items were qualitatively changed by the context within which the self-esteem items were presented.

Thus Marsh and Yeung (1999) found that responses to self-esteem items embedded among items focusing on a specific self-concept domain (academic, artistic, or physical) were more highly correlated to that specific domain than self-esteem items from a broadly based multidimensional self-concept instrument. Hence identical self-esteem items, when placed in different domain-specific instruments (e.g., Artistic Self Perception Inventory, Academic SDQ, and Physical SDQ), may result in differentiated interpretations and information retrieval in the "conversation" between the researcher and the respondent leading to a temporary representation of the self within the context defined by the domain specificity of the respective survey items. Their confirmatory factor analysis models demonstrating that the same self-esteem items embedded in different instruments measured distinct factors suggested changes in the nature of the construct that is being measured such that any attempt to examine mean shifts would become dubious.

Is Self-esteem Content Free?

The findings of the Marsh and Yeung's (1999) study cast doubt on the appropriateness of interpretations of results based on experimental and correlation studies in which global self-esteem is assumed to be content free. Because respondents may form their self-esteem judgments based on the immediate context of the survey, comparisons between two sets of responses would not be appropriate unless both sets of responses are content free or both sets of responses are defined within the same context. Because self-esteem judgments are likely to be influenced by the context in which the self-esteem responses are obtained, an interesting question is whether self-esteem responses can ever be content free, and whether some self-esteem responses can be relatively unaffected by the context. In a survey with an academic focus, for example, whereas a self-esteem item such as "I have a lot of confidence" is more likely to be related to the information about the respondent's academic characteristics, another item such as "I have a lot of respect for myself" may not activate information about academic characteristics to a similar extent. Thus on the basis of cognitive information processing explanations for responses to survey items offered by Sudman, Bradburn, and Schwarz (1996), Tourangeau and Rasinski (1988), and Schwarz and Strack (1991), "I have a lot of confidence" is more likely to be interpreted as "I have a lot of confidence in my academic work" within an academic context. In contrast, "I have a lot of respect for myself" may be less context-dependent, especially for adults who have a diversity of life experiences other than academic work.

The purpose of the present investigation is to examine whether some self-esteem responses are influenced by the content of other items with which the self-esteem items appear whereas some other self-esteem items are relatively content free. Students at different levels (high school and college) completed self-esteem items embedded in a survey on academic self-concepts in specific curriculum domains with items also on a global school (academic) self-concept scale which asked students about their general perceptions of school work. For the purpose of the present study, only the self-esteem and school self-concept factors in the survey were used in the analysis. The self-esteem items were categorized into two hypothetical constructs: academic and nonacademic self-esteem. Critical tests involve an evaluation of whether self-esteem items embedded in a survey with a focus on academic self-concept reflect one or two (academic and nonacademic) hypothetical constructs and an examination of the correlation of these self-esteem scales with a global school (academic) self-concept construct. High school students were expected to perceive the self-esteem construct to be academic such that the self-esteem items would form one single factor, which would be correlated with general school self-concept. College students, because of their more diverse experiences in life events, would distinguish between the hypothetical academic and nonacademic self-esteem constructs such that school self-concept would be more highly correlated with academic than with nonacademic self-esteem.

Study 1: High School Students

Participants

The participants were 474 students (160 in Grade 7, 154 in Grade 8, and 160 in Grade 9) from a state high school in China (age ranging from 11 to 15). The survey was conducted by class teachers in intact classes after obtaining consent to participate in the study from the students and their parents.

Material

Self-esteem. There were seven items adapted from Marsh's (1992b) Self Description Questionnaire II (SDQII). These self-esteem items (see Appendix) were designed by Marsh on the basis of Rosenberg's (1979) measures. The self-esteem scale measures individuals'

perceptions of the self in general terms and has demonstrated reliability in numerous previous studies.

School self-concept. There were seven items also adapted from Marsh's SDQII (see Appendix). The school self-concept scale measures students' perceptions of themselves in academic work. This scale has also demonstrated reliability in previous research. For both the self-esteem and school self-concept scales, the students responded to each item on a 6-point scale (1 = false; 6 = true).

Statistical Analyses

The items were coded such that higher scores reflected more favorable self-esteem and school self-concept. In preliminary analyses, I examined the internal consistency of each measure. Then the students' responses were examined to determine whether some of the self-esteem items would be more academic than responses to some other items. In essence, confirmatory factor analysis (CFA) models were tested to examine whether the self-esteem items would form one single factor or two factors--an academic self-esteem factor and a nonacademic self-esteem factor. To the extent that a two-factor model provided a better fit, then the correlation between each of these self-esteem factors with school self-concept would be examined. The self-esteem construct representing those responses deemed to be more academic should correlate more highly with school self-concept than would the hypothetical construct representing more general self-esteem items unlikely to be related to an academic setting. The conduct of CFA has been described elsewhere (e.g., Bollen, 1989; Byrne, 1989, 1998; Joreskog & Sorborm, 1993; Marsh, 1992a, 1992b, 1994; Pedhazur & Schmelkin, 1991) and is not further detailed here. All analyses throughout this paper were conducted with the SPSS version of LISREL (Joreskog & Sorbom, 1993). The goodness of fit of models is evaluated based on suggestions of Marsh, Balla, and McDonald (1988) and Marsh, Balla, and Hau (1996) with an emphasis on the Tucker-Lewis index (TLI), but the chi-square test statistic and the relative noncentrality index (RNI) are also presented. A typical guideline for an acceptable model fit is a TLI value greater than .9

In study 1, I first compared the ability of the data to fit a single self-esteem factor model or a model positing two (academic and nonacademic) self-esteem factors (Models 2 and 3). I hypothesized that the self-esteem items should be represented by a single factor better than by two factors. The School self-concept items were also tested to examine if they could form a single factor (Model 5). Then a global School self-concept factor was added to Model 2 (the single Esteem factor model) to examine the correlation between the self-esteem and the School self-concept factor (Model 7). The correlation between the self-esteem and school self-concept factors was expected to be reasonably high. Finally, I tested if the students could distinguish between the self-esteem and school self-concept by comparing Model 7 with a model that posited one factor representing all the self-esteem and school self-concept items (Model 8). Based on the distinctiveness of the self-esteem and school self-concept factors found in previous research, Model 8 was expected to fit less well as Model 7 positing two separate factors for self-esteem and school self-concept.

Results and Discussion: Study 1

Preliminary Analysis

Reliability estimates were good for the self-esteem and school self-concept scales (alphas = .85 and .84 respectively). Preliminary CFA with each scale separately found that correlated uniquenesses were required for model fit. Thus correlated uniquenesses were included where necessary based on the modification indexes provided by LISREL. Models with the inclusion of correlated uniquenesses are reported in Table 1 that summarizes the goodness of fit of models. All the models presented here converged to proper solutions.

Models 1 to 3: Do the Esteem Items Form 1 or 2 Esteem Factors?

Models 2 and 3 tested whether the self-esteem items should form one factor or two (academic and nonacademic) factors. Model 2 (TLI = .908) positing a single Esteem factor seemed to provide a better fit to the data than did Model 3 positing two factors (TLI = .905). The factor coefficients for both these models were reasonable (.54 to .75). Although Model 3 positing two self-esteem factors did provide a reasonable fit (TLI > .9), the correlation between the hypothesized academic and nonacademic constructs was very high (r = .93) Thus the high school students did not distinguish very well between these hypothesized constructs.

Models 4 to 8: Is There a High Correlation Between Esteem and School Self-concept?

Model 5 positing a School self-concept factor provided a good fit to the data (TLI = .971). The results provided support for the School self-concept factor. Models 7 positing a single Esteem factor and a School self-concept factor provided a good fit to the data (TLI = .914). The solution of Model 7 is presented in Table 2. The factor coefficients were good (from .54 to .75). The correlation between the Esteem and School self-concept factors was significant and substantial (r = .68). Model 8 (Table 1) positing one single factor derived from all the Esteem and School self-concept items did not provide a good fit (TLI = .810). Thus, the results show that the high school students did not distinguish between Esteem items of an academic and nonacademic nature. There was a high correlation between the students self-esteem and school self-concept but these two psychological constructs were quite distinct.

Table 1

Goodness of Fit Summary for Alternative Models

Model	χ^2	df	RNI	TLI	r between a-n	r between a-s	r between n-s
Study 1: High School Students (N = 474)							
1. Null (7 Esteem items)	1312.47	21					
2. 1 Esteem factor, 2 CU	79.60	12	.948	.908			
3. 2 Esteem factors (a & n), 2 CU	75.55	11	.950	.905	.93		
4. Null (7 School items)	1195.94	21					
5. 1 School factor, 1 CU	46.60	13	.971	.954			
6. Null (7 Esteem + 7 School items)	2825.55	91					
7. 2 factors (Esteem & School), 3 CU	262.37	73	.931	.914			.68
8. 1 factor (Esteem & School), 3 CU	496.50	74	.845	.810			
Study 2: College (N = 654)							
9. Null (6 Esteem items)	1914.67	15					
10. 1 Esteem factor	144.20	9	.929	.881			
11. 2 Esteem factors	84.55	8	.960	.924	.85		
12. Null (6 Esteem + 6 School items)	4432.56	66					
13. 2 Esteem + School factors	369.26	51	.927	.906	.85	.53	.48

Note: RNI = Relative noncentrality index. TLI = Tucker-Lewis index. Correlations (r) between academic and nonacademic (a-n), academic esteem and school self-concept (a-s), and nonacademic esteem and self-concept (n-s) are reported for models positing multiple constructs.

Study 2: College Students

Although Study 1 provided support for the distinctiveness of the general self-esteem and school self-concept constructs, it also provided support for a close relation between them. When adolescents grow up to become late adolescents and adults, their responses to self-esteem items may be based on interpretations in terms of life experiences other than those gained from the school setting. If this is so, then those items with clearer reference to more general life experiences would be more distinct from items that are more readily interpreted in

an academic sense. Then responses to the more general items would tend to correlate less with school self-concept than would those items that are more easily related to the academic setting. Study 2 investigated the possibility of these relations using college students preparing for university admission or a career in the commercial field.

Participants

The students were from a college of commerce in Hong Kong (33% were males). All the students had completed high school (age ranging from 17 to 20) and most of them aimed at university education in business-related fields after completion of a 2-year commercial studies course. Students who consented to the participation of the survey completed the questionnaire administered by the teachers in intact classes. After pairwise deletion of missing data, the sample for the analysis was 654.

Material

Self-esteem. Six items were adapted from Marsh's (1992a) Academic Self Description Questionnaire (ASDQ). They were categorized into two hypothetical self-esteem constructs: academic and nonacademic (see Appendix)

School self-concept. There were six items also adapted from Marsh's ASDQ (see Appendix). For both the self-esteem and school self-concept scales, the students responded to each item on a 6-point scale (1 = definitely false; 6 = definitely true).

Table 2. Solution of Model 7 for High School Students

	Factor Loadings		Uniquenesses	
	Esteem	School	Esteem	School
Item 1	.71*	.71*	.49*	.50*
Item 2	.66*	.65*	.57*	.57*
Item 3	.60*	.63*	.64*	.60*
Item 4	.65*	.65*	.58*	.58*
Item 5	.75*	.62*	.45*	.62*
Item 6	.73*	.67*	.47*	.56*
Item 7	.54*	.72*	.71*	.48*
Factor Correlations				
Esteem	--			
School	.68*	--		

Note: N = 474. χ^2(df) = 2825.55(91), TLI = .914. * $p < .05$

Table 3. Solution of Model 13 for College Students

	Factor Loadings			Uniquenesses		
	Estm(Acad)	Estm(Non)	School	Estm(Acad)	Estm(Non)	School
Item 1	.86*	.75*	.89*	.25*	.43*	.22*
Item 2	.83*	.80*	.90*	.31*	.37*	.18*
Item 3	.77*	.58*	.77*	.41*	.66*	.41*
Item 4	--	--	.53*	--	--	.72*
Item 5	--	--	.61*	--	--	.62*
Item 6	--	--	.80*	--	--	.37*
Factor Correlations						
Estm(Acad)	--					
Estm(Non)	.85*	--				
School	.53*	.48*	--			

Note: N = 654. χ^2(df) = 369.26(51), TLI = .906. There were two constructs for self-esteem (Estm)—Academic (Acad) and Nonacademic (Non)—which were correlated with a School self-concept construct. * $p < .05$

Statistical Analyses

As in Study 1, I first compared the ability of the data to fit a single self-esteem factor model or a model positing two (academic and nonacademic) self-esteem factors (Models 10 and 11). I hypothesized that the self-esteem items would be represented by two factors better than by one factor. Next, a global school self-concept factor was added to the two-factor model to examine the correlation of the academic and nonacademic self-esteem factors with the school self-concept factors (Model 13). Support for the hypothesis that self-esteem items would be perceived as academic or nonacademic requires a higher correlation of school self-concept with academic self-esteem than with nonacademic self-esteem.

Results and Discussion: Study 2

Preliminary Analysis

Reliability estimates were good for the self-esteem and school self-concept scales (alphas = .87 and .85, respectively).

Models 9 to 11: Do the Esteem Items Form 1 or 2 Factors?

Models 10 and 11 tested whether the six self-esteem items should form one factor or two (academic and nonacademic) factors. Model 10 positing a single self-esteem factor did not fit as well as Model 11 positing two factors (TLI values of .881 vs. .924). The factor coefficients for Model 11 were good (ranging from .58 to .86), and the correlation between the two factors was .85. Thus the college students distinguished between the hypothetical constructs of academic and nonacademic self-esteem.

Models 12 to 13: How Do the Esteem Constructs Correlate with School Self-concept?

Model 13 included school self-concept such that the relations of school self-concept with the two self-esteem constructs could be compared. Model 13, the solution of which is presented in Table 3, provided a reasonable fit to the data (TLI = .906), with reasonable factor coefficients (from .53 to .90). Similar to Model 11, the correlation between academic and nonacademic self-esteem was .85. As expected, the correlation between school self-concept and academic self-esteem (r = .53) was slightly higher than the correlation between school self-concept and nonacademic self-esteem (r = .48). Hence in sum, the college students distinguished between the two self-esteem constructs and the academic self-concept construct was perhaps more related to school self-concept.

General Discussion

According to the chameleon effect hypothesis (Marsh & Yeung, 1999), the qualitative nature of self-esteem responses may be altered by the content of other items in a survey. Thus self-esteem items embedded in a survey on academic achievement and academic self-concept would provide an academic context which would influence the respondent to interpret the self-esteem items as academic and to retrieve information from their memory relevant to the academic interpretation. As a result, the responses to self-esteem items would tend to be more academic when those items are presented in an academic context but could become more artistic if presented in an artistic context. The purpose of the present investigation was to test the possibility that in an academic context, self-esteem items that are easily related to the respondent's academic characteristics would take on an academic meaning more than other items that are more easily related to general, content-free characteristics. I hypothesized that the distinction between the hypothetical academic and nonacademic self-esteem constructs would be more distinct in more matured students for whom a general school self-concept construct would correlate more highly with academic than with nonacademic self-esteem.

The results of the two studies here with high school students and with more matured college students provided support for the hypothesis. Whereas Study 2 with college students showed a distinction between the academic and nonacademic self-esteem constructs and a logically higher correlation of general school self-concept with academic self-esteem than with the nonacademic self-esteem construct, students in Study 1 did not distinguish between the two hypothetical self-esteem constructs. Furthermore, school self-concept was correlated more highly with the presumably content-free self-esteem construct for the high school students ($\underline{r}$ = .68) than with the nonacademic self-esteem construct for the more matured students in Study 2 (r = .48). Although these correlations (Table 1) cannot be compared directly because different items were used in the scales for each study (see Appendix), the pattern of results suggest that the self-esteem responses of the high school students--even though assumed to be content free and empirically impossible to be differentiated into two constructs as for more matured students--tend to be more academic than the nonacademic self-esteem of more matured students. Thus one might argue that for the high school students, all the self-esteem items have taken on an academic meaning because they were placed in an academic context and because their cognitive interpretations of even the presumably more general, content-free self-esteem items were probably based on their limited life experiences in which the school provides the most salient input.

For college students, the accessibility of information hypothesis also predicts that certain self-esteem items should be more sensitive to the chameleon effect than some other self-esteem items. If shift in meaning should occur due to the differential process of information retrieval, then whether a self-esteem response would be more academic would depend on how likely the information related to academic characteristics is activated. However, the activation of such information depends largely on how the respondent cognitively interprets the self-esteem item. Thus unless a self-esteem item is interpreted as unrelated to academic characteristics, the response is likely to take on an academic flavor in the academic context of the survey. Otherwise, the self-esteem item may activate alternative sources of information (which may or may not include information of academic characteristics) to form the basis of the response, which would be relatively general and content free.

For example, items such as "I have a lot of confidence", "I have pretty positive feelings about myself", and "I have a very good self-concept", when presented in an academic context, are more likely to be interpreted as "I have confidence in my academic work", "I am positive about my academic work" and "I have good self-concept about my academic work" (see Appendix). Items such as "I have a lot of respect for myself", "I am pretty accepting of myself", and "I do lots of things that are important" are less likely to be associated with the academic characteristics of the individual when responding to these items. Thus in the academic context provided by the accompanying items on academic achievement and academic self-concept in various domains, the self-esteem items may be interpreted by the respondent as academic or nonacademic, and information retrieved from long-term memory to respond to the self-esteem items would become academic or general accordingly.

The results of the present investigation not only support the context effects that are well documented in personality and social psychology research (e.g., Manis, 1967; Morse & Gergen, 1970; Pardúcci, 1965; Sherif, 1935; Sherif & Hovland, 1961; Upshaw, 1969) and particularly the chameleon effect hypothesis (Marsh & Yeung, 1999) that has posed an important issue in the measurement and interpretation of global self-esteem, but has also provided suggestions to address this issue. On the one hand, the findings call for further attention of practitioners and researchers in psychology and education to the context effect such that caution needs to be taken in interpreting self-esteem responses when such responses

may be affected by a specific context. As suggested by the chameleon effect hypothesis, extreme caution is warranted when comparing mean differences when self-esteem responses are obtained in different contexts. On the other hand, the present findings also suggest that it may be possible to differentiate self-esteem items that are more likely to be affected by context from items that are relatively general and content free and unaffected by the context in which the self-esteem responses are obtained.

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Appendix

Self-esteem Items in Study 1 for High School Students

Academic

1. Overall, I am no good.
2. Overall, most things I do turn out well.
3. Most things I do, I do well.
4. Overall, I'm a failure.

Nonacademic

1. Overall, I have a lot to be proud of.
2. I don't have much to be proud of.
3. I can do things as well as most people.

School Self-concept Items in Study 1 for High School Students

1. I learn things quickly in most school subjects.
2. I do well in tests in most school subjects.
3. I have trouble with most school subjects.
4. I am good at most school subjects.
5. Most school subjects are just too hard for me.
6. I am stupid at most school subjects.
7. I get bad marks in most school subjects.

Self-esteem Items in Study 2 for College Students

Academic

1. Overall, I have a lot of confidence.
2. Overall, I have pretty positive feelings about myself.
3. Overall, I have a very good self-concept.

Nonacademic

4. Overall, I have a lot of respect for myself.
5. Overall, I am pretty accepting of myself.
6. Overall, I do lots of things that are important.

School Self-concept Items in Studies 2 and 3

1. Compared to other students I am good at most subjects.
2. I get good marks in most school subjects.
3. Work in most school subjects is easy for me.
4. I'm hopeless in most school subjects.
5. I learn things quickly in most school subjects.
6. I have always done well in most school subjects.

Note: Items were scored such that higher scores reflected more favorable responses.

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